

# SUJAN SARKER

Assistand Professor, Department of Robotics and Mechatronics Engineering  
University of Dhaka, Dhaka, Bangladesh.

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## Summary

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- Assistant professor at the Department of Robotics and Mechatronics Engineering, University of Dhaka
- Former assistant professor at the Department of Computer Science and Engineering, Ahsanullah University of Science and Technology (AUST)
- Completed Bachelor of Science (B.Sc.) and Master of Science (M.S.) from the Department of Computer Science and Engineering, University of Dhaka
- Research experience in Sensor networks, Mobile crowdsensing, Resource optimization in 5G cellular networks, Machine Learning Applications.

## Education

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### University of Dhaka

*M.S. in Computer Science and Engineering (CSE)*

**Dhaka, Bangladesh**

2016

**GPA: 3.92** on a scale of 4.00 (1<sup>st</sup> position out of 20 students)

### University of Dhaka

*B.Sc. in Computer Science and Engineering (CSE)*

**Dhaka, Bangladesh**

2013

**GPA: 3.82** on a scale of 4.00 (5<sup>th</sup> position out of 65 students)

## Teaching Experience

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### Assistant Professor

*Department of Robotics and Mechatronics Engineering*  
University of Dhaka

**October 2021 - Present**

### Lecturer

*Department of Robotics and Mechatronics Engineering*  
University of Dhaka

**November 2018 - September 2021**

### Assistant Professor

*Department of Computer Science and Engineering*  
Ahsanullah University of Science and Technology (AUST)

**April 2018 - October 2018**

### Lecturer

*Department of Computer Science and Engineering*  
Ahsanullah University of Science and Technology (AUST)

**October 2014 - March 2018**

## Industrial Experience

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### Trainee Software Engineer

*Therap Services, LLC, Dhaka*

**April 2014 - June 2014**

## Other Experiences

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### Student Advisor

Department of Robotics and Mechatronics Engineering  
University of Dhaka

September 2019 - Present

### Branch Counselor

IEEE Student Branch  
University of Dhaka

2021

### Publicity Coordinator

IEEE Computer Society Bangladesh Chapter  
University of Dhaka

2019

### Student Activity Coordinator

IEEE Robotics and Automation Society Bangladesh Chapter

2019

### Trainer

Information Technology Engineers Examination (ITEE), funded by JICA

2019

### Mentor

IEEE Student Branch  
University of Dhaka

2019

### Adjudicator

Bangabandhu Innovation Grant (BIG)  
ICT Division, Government of the People's Republic of Bangladesh

2021

## Research Interests



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Machine Learning, Deep Learning & its applications, and Computer Vision







## Publications

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### Journals.....

- Pranjol Kumar Nandi, Md. Rejaul Islam Reaj, **Sujan Sarker**, Md. Abdur Razzaque, Md. Mamun-or-Rashid, "Task Offloading to Edge Cloud Balancing Utility and Cost for Energy Harvesting IoT", *IEEE Transactions on Emerging Topics in Computing* (Under first round review).
- Nawmi Nujhat, Fahmida Haque Shanta, **Sujan Sarker**, Polash Roy, Md. Abdur Razzaque, Md. Mamun-or-Rashid, Mohammad Mehedi Hasan, "Task Execution Exploiting Grey Wolf Optimization in Collaborative Edge Computing", *IEEE Transactions on Services Computing* (Under first round review).
- Pranjol Kumar Nandi, Md. Rejaul Islam Reaj, **Sujan Sarker**, Md. Abdur Razzaque, Md. Mamun-or-Rashid, "Task Offloading to Edge Cloud Balancing Utility and Cost for Energy Harvesting IoT", *IEEE Transactions on Emerging Topics in Computing* (Under first round review).
- **Sujan Sarker**, Lafifa Jamal, Syeda Faiza Ahmed, Niloy Irtisam, "Robotics and artificial intelligence in healthcare during COVID-19 pandemic: A systematic review", *Robotics and Autonomous Systems*, Volume 146, 2021. (IF: 3.120) 
- Sifat Ahmed, Tonmoy Hossain, Oishee Bintey Hoque, Sujan Sarker, Sejuti Rahman, Faisal Muhammad Shah, "Automated COVID-19 Detection from Chest X-Ray Images : A High Resolution Network (HRNet) Approach", *SN Computer Science* 2, no. 4 (2021): 1-17. , ""
- Sejuti Rahman, **Sujan Sarker**, Md Abdullah Al Miraj, Ragib Amin Nihal, A. K. M. Nadimul

Haque, Abdullah Al Noman, “**Deep Learning–Driven Automated Detection of COVID-19 from Radiography Images: a Comparative Analysis**”, *Cognitive Computation* (2021). (IF:4.307) 

- Md. Shahin Alom Shuvo, Md. Azad RahamanMunna, **Sujan Sarker**, Tamal Adhikary, Md. Abdur Razzaque, Mohammad Mehedi Hassan, Gianluca Aloï, Giancarlo Fortino, “**Energy-efficient scheduling of small cells in 5G: A meta-heuristic approach**”, *Journal of Network and Computer Applications*, Volume 178, 2021. (IF:5.570) 
- Palash Roy, **Sujan Sarker**, Md. Abdur Razzaque, Md. Mamun-or-Rashid, Mohmmad Mehedi Hassan, Giancarlo Fortino, “**Distributed task allocation in Mobile Device Cloud exploiting federated learning and subjective logic**”, *Journal of Systems Architecture*, Volume 113, 2021. (IF: 2.552) 
- Palash Roy, **Sujan Sarker**, Md. Abdur Razzaque, Mohammad Mehedi Hassan, Salman A. AlQah-tani, Gianluca Aloï, Giancarlo Fortino, “**AI-enabled mobile multimedia service instance placement scheme in mobile edge computing**”, *Computer Networks*, Volume 182, 2020. (IF: 3.111) 
- Palash Roy, Anika Tahsin, **Sujan Sarker**, Tamal Adhikary, Md. Abdur Razzaque, Mohammad Mehedi Hassan “**User mobility and Quality-of-Experience aware placement of Virtual Network Functions in 5G**”, *Computer Communications*, Volume 150, 2020. (IF: 2.816) 
- **Sujan Sarker**, MA Razzaque, MM Hassan, A Almogren, G Fortino, M Zhou, “**Optimal Selection of Crowdsourcing Workers Balancing Their Utilities and Platform Profit**”, *IEEE Internet of Things Journal*, vol. 6, no. 5, 2019. (IF: 9.936) 
- MMA Pritom, **Sujan Sarker**, MA Razzaque, MM Hassan, MA Hossain, “**A Multi-constrained QoS Aware MAC Protocol for Cluster-based Cognitive Radio Sensor Networks**”, *International Journal of Distributed Sensor Networks*, vol. 11, no. 5, 2015. (IF: 1.151) 

#### Book Chapters.....

- Tonmoy Hossain, **Sujan Sarker**, Sejuti Rahman and Md Atiqur Rahman Ahad, “**Skeleton-Based Human Action Recognition on Large-Scale Datasets.**”, *Vision, Sensing and Analytics: Integrative Approaches*. Springer, Cham, 2021. 
- **Sujan Sarker**, Sejuti Rahman, Tonmoy Hossain, Syeda Faiza Ahmed, Lafifa Jamal, and Md. Atiqur Rahman Ahad, “**Skeleton-Based Activity Recognition: Preprocessing and Approaches**”, *Contact-less Human Activity Analysis*, Springer Nature Switzerland AG (2021). 
- Sejuti Rahman, **Sujan Sarker**, A. K. M. Nadimul Haque and Monisha Mushtary Uttsha, “**Deep Reinforcement Learning: A New Frontier in Computer Vision Research.**”, *Vision, Sensing and Analytics: Integrative Approaches*. Springer, Cham, 2021. 

#### Conferences.....

- Zahan Zib Sarowar Dhrubo, Md. Ashiful Islam Hridoy, Lafifa Jamal, **Sujan Sarker**, Mohammad Shidujaman, “**Development of a Sign Language for Total Paralysis and Interpretation using Deep Learning**”, *IEEE International Conference on Image Processing and Robotics (ICIPRoB)*, Negombo, Srilanka, March 2020.
- N Irtisam, R Ahmed, MM Akash, R Abdullah, **S Sarker**, S Rahman, L Jamal, “**Pathfinder: A Fog Assisted Vision-Based System for Optimal Path Selection of Service Robots**”, *2020 9th International Conference on Informatics, Electronics & Vision (ICIEV)*, Kitakyushu, Japan. Aug 2020.
- M. T. Abdullah, M. J. A. Sourov, S. Rahman and **S. Sarker**, “**Simulation of Pattern Formation of Swarm with Minimum Shape Parameters**”, *2020 Joint 9th International Conference on Informatics, Electronics & Vision (ICIEV) and 2020 4th International Conference on Imaging, Vision & Pattern Recognition (icIVPR)*, Kitakyushu, Japan, Aug 2020.

- S. Saha, M. A. Habib, **S. Sarkar**, M. A. Razzaque and M. M. Rahman, “**Minimizing Execution Cost of User Application Codes in Mobile Device Cloud**”, 2019 *International Conference on Sustainable Technologies for Industry 4.0 (STI)*, Dhaka, Bangladesh, 2019 (**Best Paper Award**).
- F. Huq, N. Sultana, **S. Sarkar**, M. A. Razzaque and M. H. Kamal Tushar, “**Optimal Worker Selection for Maximizing Quality-of-Service of Online Food Delivery System**”, 2019 *International Conference on Sustainable Technologies for Industry 4.0 (STI)*, Dhaka, Bangladesh, 2019.
- B Sultana, JF Katha, **S Sarker**, MA Razzaque, “**Multi-Mode Project Scheduling with Limited Resource and Budget Constraints**”, 2018 *International Conference on Innovation in Engineering and Technology (ICIET)*, Bangladesh. Dec 2018 (**Best Paper Award**).
- MS Hossain, SMH Reza, **S Sarker**, MA Razzaque, “**Optimizing Deployment Period of Service Replication in 5G Edge Network**”, 2018 *International Conference on Innovation in Engineering and Technology (ICIET)*, Bangladesh. Dec 2018.
- **S Sarker**, AK Nath, A Razzaque, “**Tradeoffs between sensing quality and energy efficiency for context monitoring applications**”, 2016 *International Conference on Networking Systems and Security (NSysS)*, Bangladesh, Jan 2016.

## Projects

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**Project Title:** IHABOT: Intelligent Hospital Assistance Robot to Fight Contagion by Reducing Doctor-Patient Interaction

**Funding Agency:** Centennial Research Grant, University of Dhaka

**Status:** Ongoing

**Role:** Co-Principal Investigator

**Duration:** Jan 2021 – Dec 2021

## Awards & Achievements

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- **Innovative Asia Short-term Scholarship** for *Short-term Program of Innovative Asia: Cutting-edge technologies on Robotics and AI* organized by Japan International Cooperation Agency (JICA) in collaboration with Shibaura Institute of Technology, February 24, 2020 to March 7, 2020.
- **Best Paper Award** in 2018 International Conference on Innovation in Engineering and Technology (ICIET), 23-24 December 2018
- **ICT Fellowship** given by ICT Division, Government of the People’s Republic of Bangladesh for MSc. Study in Computer Science and Engineering, January 2015 – June 2016
- Bangladesh Government Board Scholarship for HSC Examination, Dhaka Board (Science Group), 2008
- Bangladesh Government Board Scholarship for SSC Examination, Dhaka Board (Science Group)
- Bangladesh Government General Scholarship in Junior Scholarship Examination, 2003
- Bangladesh Government Talent Pool Scholarship in Primary Scholarship Examination, 2000

## Technical Skills

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**Languages:** Python, C, C++, C#, JAVA, HTML5, PHP, XML, JavaScript, .net, 80x86 Assembly

**Framework:** CSS, OpenGL

**Database:** MySQL, SQLite, Oracle

**Design Tools:** NetBeans, Microsoft Visual Studio, PyCharm

**Operating System:** Windows, LINUX, Android

**Hardware:** ATMEL (AVR Programming)

**Deep Learning Tools:** Keras, PyTorch, TensorFlow  
**Others:** PL/SQL, LaTeX

## **Talk, Seminar & Workshop**

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- Invited Talk on – “IEEE highlighting the motto and benefits of IEEE membership” Host: IEEE Student Branch, University of Dhaka October 19, 2019
- Invited Talk on – “Membership Benefits and Formation Requirements of IEEE CS SBC” Host: IEEE Student Branch, University of Asia Pacific October 26, 2019
- Seminar on – “Research Methodology” August 02, 2019 Host: IEEE Computer Society SBC, RUET
- Seminar on – “Introduction to Optimization” June 19, 2019 Host: Department of Computer Science and Engineering, Green University of Bangladesh
- Workshop on – “Python Programming” March 20, 2019 Host: Department of Computer Science and Engineering, Green University of Bangladesh